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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,483	09/30/2003	Andrew J. Ogle	INSG0011	7523

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SMYRSKI LAW GROUP, A PROFESSIONAL CORPORATION
3310 AIRPORT AVENUE, SW
SANTA MONICA, CA 90405

EXAMINER

KROFCHECK, MICHAEL C

ART UNIT PAPER NUMBER

2186

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/676,483	OGLE, ANDREW J.	
	Examiner	Art Unit	
	Michael Krofcheck	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 6, 9-11, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 4, 7, 8, 12, 13 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the amendment filed on 2/28/2006.
2. The specification has been amended.
3. Claims 1, 4-5, 8, and 10-15 have been amended.
4. The objections/rejections not restated herein are withdrawn.
5. Claims 1-18 are pending.

Claim Objections

6. Claim 16 are objected to because of the following informalities:
 - a. With respect to claim 16, the 1st and 2nd status bits are opposite from the 1st and 2nd status bits mentioned in the spec and figure 9.Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-3, 5, 9-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Kulkarni et al. U.S. Patent 6,775,423 (hereinafter Kulkarni).

9. With respect to claim 1, Kulkarni teaches of an updating system for transforming a first data image into a second data image, wherein said first image resides across k memory blocks of a block-structured non-volatile memory device contained in a client device (fig. 1; column 5, lines 12-32), said updating system comprising: a. An update generator (fig. 1; items 102; column 4, lines 11-50) that produces an update package resulting from a comparison between the first data image and the second data image (fig. 1; items 120 and 124; column 4, lines 28-50; where the differences file and modified differences file (update packages) is created by including the new data section from the new image and references to the old image for the repeated data)

whereby said comparison selects and encodes an instruction set comprising a plurality of SETBLOCK, COPY and ADD operations for each of the k memory blocks (figs. 2; column 5, lines 51-59; column 9, lines 42-58; where the modified differences file contains data sections that contain data from the new image (ADD operations) and copy sections (COPY operations). The header between each section gives specific information about the section following the header. The header thus separates the different data sections (blocks) in the modified differences file indicating the order that the data sections are to be processed (SETBLOCK operations)); and

b. An update decoder resident on the client device whereby said update decoder interprets the instruction set of the update package and applies the update package to update the k memory blocks (fig. 1; column 5, lines 20-25; where the flash manager

(update decoder) is configured to collect data sections for the image to create the new image).

10. With respect to claim 2, Kulkarni teaches of all the limitations of the parent claim as discussed supra. Kulkarni also teaches of a communications network (fig. 1; column 4, lines 11-20; where the server includes a network interface for communicating with remote computing devices over a network, such as the Internet) and a host server (fig. 1; item 102) that comprises the update generator, whereby the update package is delivered from the host server to the client device via the communications network (fig. 6; column 9, lines 59-65; where the PDA (client device) dials into the server via the Internet and downloads the modified differences file).

11. With respect to claim 3, Kulkarni teaches of all the limitations of the parent claim as discussed supra. Kulkarni also teaches of wherein for each memory block X of k blocks an updated version of such Xth memory block is first constructed in a scratch memory (column 9, line 66-column 10, line 15; where the flash manager starts to build the new image and temporarily stores portions of it in the new memory block (scratch memory)), and

then memory block X is reprogrammed with the contents of the scratch memory (column 9, line 66-column 10, line 15; where the contents of the new memory block are written to the flash memory when the portion of the new image is greater than one-half the size of a write block in the flash memory).

12. With respect to claim 5, Kulkarni teaches of all the limitations of the parent claim as discussed supra. Kulkarni also teaches of wherein said k memory blocks are

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updated in a non-sequential order as specified by the SETBLOCK operations comprising the instruction set (figs. 2, 6; column 9, lines 42-58, column 9, line 66-column 10, line 1; where the modified differences file contains re-ordered sections that start with their respective headers. The order shown by the headers is the order the sections will be updated. As shown in the figure, the order is not sequential. The flash manager uses the modified differences file to build the new image).

13. With respect to claim 9, Kulkarni teaches of a method of updating to a second image a first image stored across k memory blocks of a non-volatile memory device contained in a client device (fig. 1; column 5, lines 12-32), said updating method comprising: a. Generating an update package by comparing the first image and the second image (fig. 1; items 120 and 124; column 4, lines 28-50; where the differences file and modified differences file (update packages) is created by including the new data section from the new image and references to the old image for the repeated data) and

using result of said comparison to encode an instruction set comprised of a plurality of SETBLOCK, COPY and ADD operations for each of the k memory blocks (figs. 2; column 5, lines 51-59; column 9, lines 42-58; where the modified differences file contains data sections that contain data from the new image (ADD operations) and copy sections (COPY operations). The header between each section gives specific information about the section following the header. The header thus separates the different data sections (blocks) in the modified differences file indicating the order that the data sections are to be processed (SETBLOCK operations));

b. Applying the instruction set by interpreting the instruction set to direct the updating of the memory blocks in an order specified by the SETBLOCK operations (figs. 2, 6; column 9, lines 42-58, column 9, line 66-column 10, line 1; where the modified differences file contains re-ordered sections that start with their respective headers. The order shown by the headers is the order the sections will be updated. The flash manager uses the modified differences file to build the new image).

14. With respect to claim 10, Kulkarni teaches of all the limitations of the parent claim as discussed supra. Kulkarni also teaches of wherein said applying step further comprises, for each memory block X of k blocks, a. constructing an updated version of such Xth memory block in a scratch memory location accessible to the client device (column 9, line 66-column 10, line 15; where the flash manager starts to build the new image and temporarily stores portions of it in the new memory block (scratch memory)),

wherein said scratch memory location being at least as large as the largest of the k memory blocks (column 2, lines 42-63; where each RAM memory block corresponds to one flash memory block; The new memory block (scratch memory) a part of the RAM, therefore it is also the same size as the flash memory block (k memory block)), and

b. reprogramming Xth memory block with the contents of the scratch memory (column 9, line 66-column 10, line 15; where the contents of the new memory block are written to the flash memory when the portion of the new image is greater than one-half the size of a write block in the flash memory).

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15. With respect to claim 11, Kulkarni teaches of all the limitations of the parent claim as discussed supra. Kulkarni also teaches of wherein the step of applying instruction set in an order specified by the SETBLOCK operation is a non-sequential order (figs. 2, 6; column 9, lines 42-58, column 9, line 66-column 10, line 1; where the modified differences file contains re-ordered sections that start with their respective headers. The order shown by the headers is the order the sections will be updated. As shown in the figure, the order is not sequential. The flash manager uses the modified differences file to build the new image).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni, and Estakhri et al., U.S. Patent 5,845,313 (hereinafter Estakhri).

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19. With respect to claim 15, Kulkarni teaches of a system for reliably updating on a client device a first image stored across a plurality of memory blocks of a non-volatile memory device to create a second image, said system comprising: a. an update package including an instruction set (figs. 2; column 5, lines 51-59; where the differences file (update package) contains data sections, copy sections and headers between the sections that give specific information about the following section),

which instruction set comprises a plurality of ADD and COPY operations associated with each of the plurality of memory blocks to be updated (figs. 2; column 5, lines 51-59; where the differences file (update package) contains data sections (ADD operations), copy sections (COPY operations) and headers between the sections that give specific information about the following section);

wherein one X of k to updated as instructed by the instruction set contained in the update package (figs. 2; column 6, lines 1-34; where the differences file is set to modify the second block of the old image which contains 'def' to contain 'xyz');

c. an update decoder resident on said client device that interprets the update package and applies the instruction set to update the plurality of blocks on a block-by-block basis (fig. 1; column 5, lines 20-25; where the flash manager (update decoder) is configured to collect data sections for the image to create the new image), and

Kulkarni fails to explicitly teach of (1) a status array comprised of a least two switchable status identifiers associated with each of the plurality of memory blocks, (2) which update decoder accesses and manipulates the status identifiers when applying said instruction set.

However, Estakhri teaches of a status array comprised of a least two switchable status identifiers associated with each of the plurality of memory blocks (fig. 1; column 5, lines 4-8; where an old/new flag, used/free flag, and others are associated with each memory location (memory block)),

which update decoder accesses and manipulates the status identifiers when applying said instruction set (fig. 9; column 7, lines 1-25; where in writing to the flash memory, the system is unable to locate a block that has an unset used/free flag and subsequently erases the flags for all blocks with a set old/new flag).

Kulkarni, and Estakhri are analogous arts as they are both in the same field of endeavor, flash memory. It would have been obvious to one of ordinary skill in the art having the teachings of Kulkarni, and Estakhri at the time of the invention to incorporate the process of avoiding erasure cycles as taught in Estakhri into the flash memory in Kulkarni. The motivation for this would have been to lengthen the life of the flash memory by lessening the number of erasure cycles performed during use (Estakhri column 1, lines 34-43 & column 2, lines 60-61).

20. Claim 6, 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kulkarni and Miller U.S. Patent 5,832,520 (hereinafter Miller).

21. With respect to claim 6, Kulkarni teaches of all the limitations of the parent claim as discussed supra. Kulkarni fails to explicitly teach of wherein the instruction set further comprises a plurality of COPYADD operations in lieu of at least a portion of the plurality of COPY operations.

However, Miller teaches of wherein the instruction set further comprises a plurality of COPYADD operations in lieu of at least a portion of the plurality of COPY operations (column 8, line 66-column 9, line 5; where an insert followed by a copy is returned as a raw DIFF command sequence. The order of the operation (insert or copy first) is arbitrary as one of ordinary skill in the art would have known that a list of individual insert and copy operations can be grouped into insert/copy or copy/insert operations and still achieve the same result).

Kulkarni and Miller are analogous arts as they are both in the same field of endeavor, using difference files to update data. It would have been obvious to one of ordinary skill in the art having the teachings of Kulkarni and Miller at the time of the invention to combine the data and copy sections of Kulkarni as is taught in Miller. The motivation for this would have been to decrease the size of the difference file (Miller, column 8, lines 57-65).

22. With respect to claim 14, Kulkarni teaches of all the limitations of the parent claim as discussed supra. Kulkarni fails to explicitly teach of maintaining a first copy-offset value and a second copy-offset value, and selection setting a copy-offset value by a plurality of COPYOFFSET values in the client.

However, Miller teaches of maintaining a first copy-offset value and a second copy-offset value (fig. 9; column 16, lines 54-64; where within the difference file, there are multiple commands and each CMP command contains its own offset value), and

selection setting a copy-offset value by a plurality of COPYOFFSET values in the client (fig. 9; column 16, lines 54-64; where within the difference file, there are multiple

commands and each CMP command contains its own offset value. The offset value in each command is used as the offset value for that operation).

Kulkarni and Miller are analogous arts as they are both in the same field of endeavor, using difference files to update data. It would have been obvious to one of ordinary skill in the art having the teachings of Kulkarni and Miller at the time of the invention to include a copy with a move to a new location (offset) in Kulkarni as is taught in Miller. The motivation for this would have been to decrease the size of the difference file (Miller, column 8, lines 57-65).

Response to Arguments

23. Applicant's arguments filed on 2/28/2006 have been fully considered but they are not persuasive.

24. Applicant argues that the limitations rejected with respect to claim 1 are not the entire limitations. The examiner points out that all the limitations cited in claim 1 have been examined and have prior art applied to. The examiner merely separated the parts of the claim, and made citations with respect to each part so it would be easier to follow, versus stating out the claim and then a long string of citations. Either way, the claim is still read the same way, and the art is applied the same.

25. Applicant argues with respect to independent claims 1 and 9 that Kulkarni does not select and encode an instruction set comprised of a plurality of SETBLOCK, COPY, and ADD operations for each k memory blocks; more specifically that Kulkarni does not teach of a SETBLOCK operation. The examiner refers to Kulkarni, figs. 2a-2d and to

column 9, lines 42-58, which outlines an modified difference file. This file is out of order with respect to the locations of the blocks (shown in the figures). Each section of the file pertains to a different block, and is related to a header file which, "gives specific information about the section that follows the header," (column 5, lines 57-59). Since the sections are out of order with respect to the blocks, it cannot just go down the line updating each block in address order relating that to the order in the modified differences file, there would be numerous errors. Since the header contains the specifics of each section, the header must contain which block the section corresponds to, thus the header is an implemented SETBLOCK operation as it identifies the block that corresponds to the next section.

26. In regards to the applicant's arguments to claim 1, that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "SETBLOCK operations to optimize the COPY and ADD operations required in order to reduce the size of the update package" (p. 14), and "interpreting the instruction set of the update package in an order specified by the SETBLOCK operations" (p. 15)) are not recited in the rejected independent claim 1. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

27. Applicant argues with respect to independent claim 9 that Kulkarni does not update the memory blocks in an order specified by the SETBLOCK operation. The examiner refers the Applicant to paragraph 25 above. In addition, the flash manager

must read each header to know the specifics of each section, then it updates that data blocks in the flash depending on the instructions in each section. The order they are updated is based on the headers, not the linear order of the blocks in the memory.

28. Applicant's arguments with respect to claim independent claim 15 have been considered but are moot in view of the new ground(s) of rejection. The Estakhri reference of US Patent 5,485,595 was erroneously cited in the prior correspondence. The properly cited reference of US patent 5,845,313 (Estakhri et. al) has been cited in regards to independent claim 15 above.

Allowable Subject Matter

29. Claims 4, 7-8, 12-13, 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

30. The statement of reasons for the indication of allowable subject matter has been made in the prior correspondence. The text of claims 4 and 5 have switched, resulting in claim 4 being indicated allowable in place of claim 5. Claims 8 and 13 were amended to depend from claims 7 and 12, respectively, which were previously indicated as containing allowable subject matter.

Conclusion

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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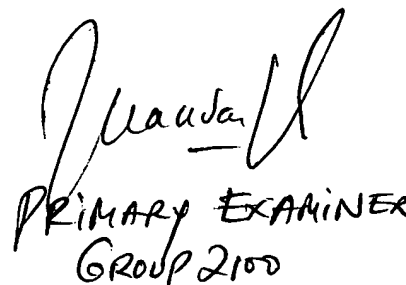
32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Krofcheck whose telephone number is 571-272-8193. The examiner can normally be reached on Monday - Friday.

33. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

34. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Krofcheck



PRIMARY EXAMINER
GROUP 2100